

REMARKS

The Office Action mailed on May 16, 2003, made final, has been carefully considered and the Examiner's remarks are appreciated. Claims 1-32 are pending in the application, and are presented for examination. The foregoing amendments are responsive to the Office Action, with support for the amendments found in the Specification, Claims, and Drawings.

Brief Discussion of the Invention

The present invention is an electrical connector and connector chip which is formed from a sheet of electrically conductive material that lies between two layers of nonconducting material. A passageway is provided which includes an opening formed in the sheet by "resiliently-biasing" fingers centripetally extending into the passageway. When an electrically conductive pin is inserted into the passageway, the resiliently-biasing fingers bend by a cantilever-like deflection in the direction of pin insertion, and the opening adapts to the diameter of the pin. Due to the cantilever-like deflection, the periphery of the opening applies a normally-directed friction force to the sides of the pin, and thus holds the pin within the opening and in contact with the sheet.

Brief Discussion of U.S. Pat. No. 4,700,214 to Johnson

U.S. Pat. No. 4,700,214 to Johnson discloses electrical circuitry comprising a plurality of layers, each layer including one or more electrical pathways and insulation for insulating at least part of one layer from another layer. The pathways comprise repeating flower-shaped patterns having eight wedge-shaped sections grouped in pairs to form quarter sections and an opening at the center of the flower pattern. As shown in Figure 7 and 8 of Johnson, a backerboard is

positioned underneath a conducting layer (comprising the pathways), with a circular hole of the backerboard aligned with the hole of the flower-shaped pattern. A pin is then forced through the center of the flower-shaped pattern and the circular hole of the backerboard to thereby crimp the wedges of the flower pattern around a perimeter edge of the backerboard hole, and into the backerboard hole between the pin sidewall and the sidewall of the backerboard hole. In this manner of force-fitting, an electrical connection may be established between the pin and the electrical pathways.

Discussion of the Office Action

In the Office Action of May 16, 2003, the Examiner objected to the amendment filed 2-18-03 due to the alleged introduction of new matter, and also rejected claims 1032 under 35 U.S.C. 112, first paragraph. The Examiner also rejected claims 1-9, 11-13, 15, 17-31 under 35 U.S.C. §102(b), and he rejected claims 10, 14, 16, and 32 under 35 U.S.C. §103(a).

Discussion of the New Matter Objections in the Specification

The Examiner objected to the amendment filed 2-19-03 under 35 U.S.C. 132 as introducing new matter. In particular, the Examiner objected to the statement, *“a resilient-biasing in the insertion direction of the pin without crimping or otherwise permanently bending of the fingers.”* It is respectfully submitted, however, that original Figure 3 of the drawings in fact clearly shows, to one of ordinary skill in the art, the resilient biasing without crimping or otherwise permanently bending of fingers 20 and 23 when a pin 35 is inserted through the opening 11. Therefore, the added material describing Figure 3 as such is also appropriate, pursuant to In re Wolfensperger (133 USPQ 537, 542), as follows in part:

"The practical, legitimate inquiry in each case of this kind is what the drawing in fact discloses to one skilled in the art. Whatever it does disclose may be added to the specification in words without violation of the statute and rule which prohibits "new matter," 35 U.S. C. 132, Rule 118, for the simple reason that what is originally disclosed cannot be "new matter" within the meaning of this law."

To one of ordinary skill in the art, the curved, cantilever-like deflection of the fingers illustrated in Figure 3 readily evidences a resilient biasing, i.e. elastic deformation, which is characteristic of the flexible conductive material (such as beryllium copper) utilized for the sheet 18 and fingers 20 and 23, described on page 4 of the Specification. Moreover, it is appreciated that a "resilient-biasing" or elastic deformation is inherently antithetical to crimping, permanent bending, or other type of plastic deformation. Thus, describing the flexure of the fingers in Figure 3 as occurring "without crimping or otherwise permanent bending" cannot be improper.

Discussion of the Rejections under 35 U.S.C. §112, First Paragraph

The Examiner rejected claims 1-32 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner stated, *"The disclosure does not support Amendment B filed on 2-18-03 where resilient-biasing is defined to be without crimping or otherwise permanently bending of the fingers after the pin has been removed."* It is first notable, contrary to Examiner's statement, that Applicants have not used the phrase *"without crimping or otherwise permanently bending of the fingers"* to define the term *"resilient biasing."* Both are used in the specification to describe the bending shown in Figure 3, as discussed above. More importantly, it is respectfully submitted that the written description requirement is satisfied with respect to the term *"resiliently-biasing"* used in claims 1-32, since

the specification and the drawings taken together reasonably conveys to one of ordinary skill in the art that Applicants possessed the invention. As noted by the CAFC in Vas-Cath, Inc. v. Mahurkar (19 USPQ 2d 1111):

“...under proper circumstances, drawings alone may provide a ‘written description’ of an invention as required by Section 112.”

Therefore, and as discussed previously, Figure 3 shows to one of ordinary skill in the art the resiliently-biasing elastic deformation experienced by the fingers when a pin is inserted, and where the fingers are described in the specification as composed of a “flexible conductive material.”

Discussion of the Examiner’s Response to Applicant’s Amendment (of 2-18-03)

The Examiner stated that, even if the “resiliently biasing” language was considered (despite the alleged new matter conflict) the Johnson reference still reads on the claimed invention. In support of this conclusion, the Examiner stated, *“The flower like cantilever fingers (of Johnson) do have a resilient biasing force against the inserted pin because the flower like cantilever fingers are in a first position, (normal position), before the pin is inserted and second position after the pin is inserted, which the second position is different from the first. The finger’s normal force allows the fingers to stay in the first position, but when the pin is inserted the fingers would still have a deflecting force, (resilient biasing), otherwise if the resilient biasing force was not present the fingers would already be positioned in the second position.”*

It is respectfully submitted, that the Examiner has failed to appreciate the meaning of “resiliently-biasing” as substantially synonymous with “elastically deforming/displaced.” In this

regard, the Examiner does not consider the mechanical differences between elastic and plastic deformations. This is underscored by his latter statement, “...otherwise if the resilient biasing force was not present the fingers would already be positioned in the second position” which clearly indicates the Examiner’s misunderstanding of the term “resiliently biasing” and its plain meaning as used in the claims. According to the American Heritage Dictionary of the English Language, Fourth Edition (2000), for example, the term “resilient” is defined as:

1. Marked by the ability to recover readily, as from misfortune. 2. Capable of returning to an original shape or position, as after having been compressed. See synonyms at flexible.

Furthermore, according to the Online Plain Text English Dictionary, for example, the verb transitive form of the term “biasing” is defined as “to incline to one side.” Thus, the plastic deformation shown by the crimping process shown in Johnson cannot reasonably be described as a “resiliently-biasing” process, especially when considering the location and function of the backerboard in Johnson to achieve the sharp angle (90 degree angle shown in Figure 8) necessary to perform the crimp.

As shown in Figure 3 of the drawings, the “resiliently-biasing” aspect of the means for holding, e.g. the centripetally extending fingers 20, 23 (and 21, 25 not shown), enables it to be deflected in a resilient manner when a pin 35 is inserted through the opening 27. Moreover, the resilient deflection is experienced without “crimping” or otherwise permanently deforming.

In contrast, the Johnson reference establishes an electrical contact between a pin and an electrical pathway by crimping the wedge-shaped sections to permanently bend the sections into a conforming shape. The crimped portions formed in this manner are used to produce a snug forced-fit between the pin sidewall and the sidewall of a circular hole of a backerboard used in

performing the crimp. It is appreciated however, that the crimped portions do not themselves exert the normally-directed friction force. Rather, it is the appropriately dimensioned hole of the backerboard which exerts the friction force necessary for a snug force fit. Therefore, removal of the backerboard after crimping, as suggested at column 7, lines 35-38 of Johnson, would likely affect the contact and consequently the friction force exerted on the inserted pin. The “resiliently-biasing” means for holding of independent claims 1, 15, 18, and 23 obviate these concerns by internally storing the cantilevered deflection energy, which is necessary to provide the normally-directed friction force against a pin.

Discussion of the Rejections under 35 U.S.C. §102(b)

Claims 1-9, 11-13, 15, 17-31 under 35 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 4,700,214 to Johnson. It is respectfully submitted that the Examiner has failed to make a prima facie case of anticipation, in view of the above discussion and MPEP §2131 as follows in part:

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference”

As discussed previously, the Johnson reference does not disclose, teach, or suggest the “resiliently biasing means” required by the claimed invention in independent claims 1, 15, 18, and 23 for holding the pin in contact with the sheet and for restraining the pin from translating with respect to the chip. Additionally, it is respectfully submitted that claims 2-9, 11-13; claim 17; claims 19-22; and claims 24-31 are also in condition for allowance as being dependent on

allowable base claims 1, 15, 18, and 23, respectively. Therefore, the 102(b) based rejections of claims 1-9, 11-13, 15, 17-31 should be withdrawn.

Discussion of the Rejections under 35 U.S.C. §103(a)

Claims 10, 14, 16, and 32 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 4,700,214 to Johnson. It is respectfully submitted that the Examiner has also failed to make a prima facie case of obviousness in view of MPEP §2143.03 as follows in part:

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art.”

As discussed above, Johnson does not disclose, teach, or suggest, for example, the “resiliently-biasing” means for holding as discussed above, and as required by claims 10, 14, 16, and 32. In contrast, the Johnson reference suggests force fitting the pin into the hole of the backerboard to achieve the retainment of the pin in the hole. Thus, it is also respectfully submitted that the 103-based rejections to claims 10, 14, 16, and 32 are also in condition for allowance as being dependent on allowable base and/or intervening claims.

Summary

Applicant respectfully submits that Claims 1-32 are in condition for allowance.

Applicant respectfully requests allowance of claims 1-32.

In the event that the Examiner finds any remaining impediment to the prompt allowance of these claims that could be clarified with a telephone conference, he is respectfully requested to initiate the same with the undersigned at (925) 422-7274.

Respectfully submitted,

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